

Custom 450® Stainless
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Typical Stress-Corrosion-Cracking Resistance per NACE TM-01-77 (a)

Alloy	Condition	0.2% Yield Strength		Ultimate Tensile Strength		Rockwell C Hardness	Threshold Stress Level (b) as Percent of Yield Strength
		ksi	MPa	ksi	MPa		
Custom 450®	H 1150	82	565	132	910	28	52
17Cr-4Ni	H 1150M	107	738	132	910	29	30
Type 410	Hardened and Tempered 1200°F (649°C) + 1150°F (621°C)	94	648	115	793	20.5	15

(a) 5 w/o sodium chloride + 0.5 w/o acetic acid solution continuously purged with hydrogen sulfide at 75°F (24°C).

(b) The maximum tensile strength at which no failures occurred in 720 hours.

References:

(1) Burns, D.S., "Laboratory Test for Evaluating Alloys for H₂S Service," *H₂S Corrosion in Oil and Gas Production – A Compilation of Classic Papers*, eds. R.N. Tuttle and R.D. Kane, NACE, Houston, Texas, 1981.

(2) Pressouyre, G.M., Bretin, L., and Zmudzinski, C., "New Steels for Use in H₂S Environments," *Corrosion* 81, Paper No. 181, April 1981.

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